



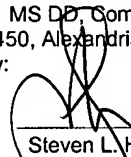
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March 18, 2004

CERTIFICATE OF MAILING 37 C.F.R. 1.8	
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**MS DD**  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, Virginia 22313-1450

RE: *U.S. Patent Application No. 10/697,991 entitled "QUANTITATIVE ANALYSIS OF PROTEIN ISOFORMS USING MATRIX-ASSISTED LASER DESORPTION/IONIZATION TIME OF FLIGHT MASS SPECTROMETRY" – M. Benjamin Perryman et al.*  
*Our reference: UTEC:007US*

Sir:

Enclosed for filing in the above-referenced patent application is an Information Disclosure Statement, Form PTO-1449, and references C1-C44.

No fees are believed to be due in connection with the filing of this Information Disclosure Statement, however, should any fees under 37 C.F.R. §§ 1.16 to 1.21 be deemed necessary for any reason relating to the enclosed materials, the Commissioner is authorized to deduct the appropriate fees from Fulbright & Jaworski Deposit Account No.: 50-1212/UTEC:007US.

Please date stamp and return the enclosed postcard evidencing receipt of these materials.

Respectfully submitted,



Steven L. Highlander  
Reg. No. 37,642

SLH/kmv  
Encl.: as noted



**PATENT**  
**CUSTOMER NO: 32425**

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:  
M. Benjamin Perryman *et al.*

Serial No.: 10/697,991

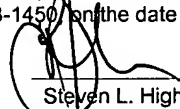
Filed: October 30, 2003

For: QUANTITATIVE ANALYSIS OF  
PROTEIN ISOFORMS USING MATRIX-  
ASSISTED LASER  
DESORPTION/IONIZATION TIME OF  
FLIGHT MASS SPECTROMETRY

Group Art Unit: 2881

Examiner: Unknown

Atty. Dkt. No.: UTEC:007US

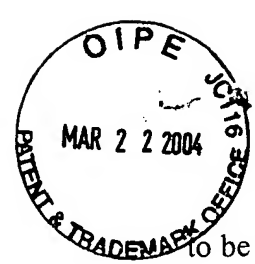
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March 18, 2004	
Date	Steven L. Highlander

**INFORMATION DISCLOSURE STATEMENT**

**MS MISSING PARTS**  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, Virginia 22313-1450

Sir:

In compliance with the duty of disclosure under 37 C.F.R. § 1.56, it is respectfully requested that this Information Disclosure Statement be entered and the documents listed on attached Form PTO-1449 be considered by the Examiner and made of record. Copies of the listed documents required by 37 C.F.R. § 1.98(a)(2) are enclosed for the convenience of the Examiner.



In accordance with 37 C.F.R. §§ 1.97(g), (h), this Information Disclosure Statement is not to be construed as a representation that a search has been made, and is not to be construed to be an admission that the information cited is, or is considered to be, material to patentability as defined in 37 C.F.R. § 1.56(b).

The present Information Disclosure Statement is being filed prior to the receipt of a first Official Action reflecting an examination on the merits, and hence is believed to be timely filed in accordance with 37 C.F.R. § 1.97(b). No fees are believed to be due in connection with the filing of this Information Disclosure Statement, however, should any fees under 37 C.F.R. §§ 1.16 to 1.21 be deemed necessary for any reason relating to these materials, the Commissioner is authorized to deduct the appropriate fees from Fulbright & Jaworski Deposit Account No.: 50-1212/UTEC:007US.

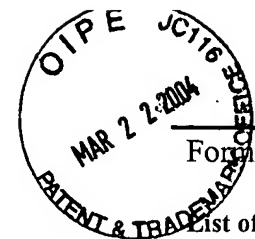
Applicants respectfully request that the listed documents be made of record in the present case.

Respectfully submitted,

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Attorney for Applicants

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Date: March 18, 2004



Form PTO-1449 (modified)

Atty. Docket No.  
UTEC:007USSerial No.  
10/697,991

List of Patents and Publications for Applicant's

Applicant  
M. Benjamin Perryman *et al.*

## INFORMATION DISCLOSURE STATEMENT

(Use several sheets if necessary)

Filing Date:  
October 30, 2003Group:  
2881U.S. Patent Documents  
*See Page 1*Foreign Patent Documents  
*See Page 1*Other Art  
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## U.S. Patent Documents

Exam. Init.	Ref. Des.	Document Number	Date	Name	Class	Sub Class	Filing Date of App.

## Foreign Patent Documents

Exam. Init.	Ref. Des.	Document Number	Date	Country	Class	Sub Class	Translation Yes/No

## Other Art (Including Author, Title, Date Pertinent Pages, Etc.)

Exam. Init.	Ref. Des.	Citation
	C1	Anderson <i>et al.</i> , "A comparison of selected mRNA and protein abundances in human liver," <i>Electrophoresis</i> , 18:533-537, 1997.
	C2	Boheler <i>et al.</i> , "Skeletal actin mRNA increases in the human heart during ontogenic development and is the major isoform of control and failing adult hearts," <i>J. Clin. Invest.</i> , 88:323-330, 1991.
	C3	Bucknall <i>et al.</i> , "Practical quantitative biomedical applications of MALDI-TOF mass spectrometry," <i>Journal of American Society of Mass Spectrometry</i> , 13(9):1015-27, 2002.
	C4	Caprioli <i>et al.</i> , "Molecular imaging of biological samples: localization of peptides and proteins using MALDI-TOP MS," <i>Ana. Chem.</i> , 69:4751-4760, 1997.
	C5	Chaurand <i>et al.</i> , "Direct profiling of proteins in biological tissue sections by MALDI mass spectrometry," <i>Anal. Chem.</i> , 71:5263-5270, 1999.
	C6	Chen <i>et al.</i> , "Discordant protein and mRNA expression in lung adenocarcinomas," <i>J. Chromatogr. Molecular &amp; Cellular Proteomics</i> , 1:304-313, 2002.
	C7	Desiderio <i>et al.</i> , "Mass spectrometry, high performance liquid chromatography, and brain peptides," <i>Biopolymers</i> , 40:257-264, 1996.
	C8	dos Remedios <i>et al.</i> , "Different electrophoretic techniques produce conflicting data in the analysis of myocardial samples from dilated cardiomyopathy patients: protein levels do not necessarily reflect mRNA levels," <i>Electrophoresis</i> , 17:235-238, 1996.

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Form PTO-1449 (modified)		Atty. Docket No. UTEC:007US	Serial No. 10/697,991
List of Patents and Publications for Applicant's  INFORMATION DISCLOSURE STATEMENT  (Use several sheets if necessary)		Applicant M. Benjamin Perryman <i>et al.</i>	
		Filing Date: October 30, 2003	Group: 2881
U.S. Patent Documents <i>See Page 1</i>	Foreign Patent Documents <i>See Page 1</i>	Other Art <i>See Page 1</i>	

### Other Art (Including Author, Title, Date Pertinent Pages, Etc.)

Exam. Init.	Ref. Des.	Citation
	C9	Duncan <i>et al.</i> , "Quantitative analysis of low molecular weight compounds of biological interest by matrix-assisted laser desorption ionization," <i>Rapid Commun. Mass Spectrom.</i> , 7:1090-1094, 1993.
	C10	Gobom <i>et al.</i> , "Detection and quantification of neurotensin in human brain tissue by matrix-assisted laser desorption/ionization time-of-flight mass spectrometry," <i>Anal. Chem.</i> , 72:3320-3326, 2000.
	C11	Gygi <i>et al.</i> , "Correlation between protein and mRNA abundance in yeast," <i>Mol. Cell. Biol.</i> , 19(3):1720-1730, 1999.
	C12	Herron <i>et al.</i> , "Small amounts of alpha-myosin heavy chain isoform expression significantly increase power output of rat cardiac myocyte fragments," <i>Circ. Res.</i> , 90:1150-1152, 2002.
	C13	Jespersen <i>et al.</i> , "Direct sequencing of neuropeptides in biological tissue by MALDI-PSD mass spectrometry," <i>Anal. Chem.</i> , 71:660-666, 1999.
	C14	Kanazawa <i>et al.</i> , "Establishment of a method for mapping of N-linked oligosaccharides and its use to analyze industrially produced recombinant erythropoietin," <i>Biol. Pharm. Bull.</i> , 22(4):339-346, 1999.
	C15	Li <i>et al.</i> , "Single-cell MALDI: a new tool for direct peptide profiling," <i>Trends Biotechnol.</i> , 18:151-160, 2000.
	C16	Lim <i>et al.</i> , "Expression profiling of cardiac genes in human hypertrophic cardiomyopathy: insight into the pathogenesis of phenotypes," <i>J. Am. Coll. Cardiol.</i> , 38(4):1175-1180, 2001.
	C17	Lompre <i>et al.</i> , "Myosin isoenzyme redistribution in chronic heart overload," <i>Nature</i> , 282:105-107, 1979.
	C18	Lovelace <i>et al.</i> , "Analysis of methionine enkephalin in human pituitary by multi-dimensional reversed-phase high-performance liquid chromatography, radioreceptor assay, radioimmunoassay, fast atom bombardment mass spectrometry, and mass spectrometry-mass spectrometry," <i>J. Chromatogr.</i> , 562:573-584, 1991.
	C19	Lowes <i>et al.</i> , "Changes in gene expression in the intact human heart: downregulation of $\alpha$ -myosin heavy chain in hypertrophied, failing ventricular myocardium," <i>J. Clin. Invest.</i> , 100:2315-2324, 1997.
	C20	Lowes <i>et al.</i> , "Myocardial gene expression in dilated cardiomyopathy treated with beta-blocking agents," <i>N. Engl. J. Med.</i> , 346:1357-1365, 2002.

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U.S. Patent Documents <i>See Page 1</i>	Foreign Patent Documents <i>See Page 1</i>	Other Art <i>See Page 1</i>	

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Exam. Init.	Ref. Des.	Citation
	C21	Lynn <i>et al.</i> , "Identification of enterobacteriaceae bacteria by direct matrix-assisted laser desorption/ionization mass spectrometric analysis of whole cells," <i>Rapid Commun. Mass. Spectrom.</i> , 13:2022-2027, 1999.
	C22	Mercadier <i>et al.</i> , "Plasticity of myocardial phenotype during cardiac hypertrophy and failure," <i>Bull. Acad. Nat'l Med.</i> , 177:917-931(abstract in English), 1993.
	C23	Mirogorodskaya <i>et al.</i> , "Quantification of peptides and proteins by matrix-assisted laser desorption/ionization mass spectrometry using 18O-labeled internal standards," <i>Rapid Commun. Mass. Spectrom.</i> , 14:1226-1232, 2000.
	C24	Miyata <i>et al.</i> , "Myosin heavy chain isoform expression in the failing and nonfailing human heart," <i>Circ. Res.</i> , 86:386-390, 2000.
	C25	Nadal-Ginard <i>et al.</i> , "Molecular basis of cardiac performance," <i>J. Clin. Invest.</i> , 84:1693-1700, 1989.
	C26	Nakao <i>et al.</i> , "Myosin heavy chain gene expression in human heart failure," <i>J. Clin. Invest.</i> , 100:2362-2370, 1997.
	C27	Nelson <i>et al.</i> , "Quantitative determination of proteins by matrix-assisted laser desorption/ionization time-of-flight mass spectrometry," <i>Anal. Chem.</i> , 66:1408-1415, 1994.
	C28	Nguyen <i>et al.</i> , "Protein mass spectrometry: applications to analytical biotechnology," <i>J. Chromatogr.</i> , 705:21-45, 1995.
	C29	Parker <i>et al.</i> , "Induction of S100b in myocardium: an intrinsic inhibitor of cardiac hypertrophy," <i>Can. J. Appl. Physiol.</i> , 23(4):377-389, 1998.
	C30	Razumova <i>et al.</i> , "Simulations predict that expression of small amounts of AMHC in mammalian ventricle significantly accelerates the rate of rise of force," <i>Biophys. J.</i> , 80:261a, 2001.
	C31	Reiser <i>et al.</i> , "Human cardiac myosin heavy chain isoforms in fetal and failing adult atria and ventricles," <i>Physiol. Heart Circ. Physiol.</i> , 280:H1814-H1820, 2001.
	C32	Roepstorff <i>et al.</i> , "MALDI-TOF mass spectrometry in protein chemistry," <i>EXS</i> , 88:81-97, 2000.
	C33	Schwartz <i>et al.</i> , "Contractile proteins and sarcoplasmic reticulum calcium-ATPase gene expression in the hypertrophied and failing heart," <i>Basic Res. Cardiol.</i> , 87:285-290, 1992.

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	C34	Schwartz <i>et al.</i> , "The molecular biology of heart failure," <i>J. Am. Coll. Cardiol.</i> , 22(4):30A-33A, 1993.
	C35	Stoeckli <i>et al.</i> , "Imaging mass spectrometry: a new technology for the analysis of protein expression in mammalian tissues," <i>Nat. Med.</i> , 7(4):493-496, 2001.
	C36	Tsoporis <i>et al.</i> , "S100 $\beta$ inhibits $\alpha$ 1-adrenergic induction of the hypertrophic phenotype in cardiac myocytes," <i>J. Biol. Chem.</i> , 272:31915, 1986.
	C37	Villanueva <i>et al.</i> , "Monitoring the expression and purification of recombinant proteins by MALDI-TOF mass spectrometry," <i>Enzyme Microb. Technol.</i> , 29:99-103, 2001.
	C38	Wu <i>et al.</i> , "Direct plasma sample injection in multiple-component LC-MS-MS assays for high-throughput pharmacokinetic screening," <i>Anal. Chem.</i> , 72:61-67, 2000.
	C39	Zaluzec <i>et al.</i> , "Matrix-assisted laser desorption ionization mass spectrometry: applications in peptide and protein characterization," <i>Protein Expr. Purif.</i> , 6:109-123, 1995.
	C40	Zhang <i>et al.</i> , "Comparison between liquid chromatography-time-of-flight mass spectrometry and selected reaction monitoring liquid chromatography-mass spectrometry for quantitative determination of idoxifene in human plasma," <i>Chromatogr. B. Biomed. Sci. Appl.</i> , 757:151-159, 2001.
	C41	Zhong <i>et al.</i> , "Applications of liquid chromatography-tandem mass spectrometry in drug and biomedical analyses," <i>Clin. Chem. ACTA</i> , 313:147-150, 2001.
	C42	Zhu <i>et al.</i> , "Opioid and tachykinin neuropeptides in prolactin-secreting human pituitary adenomas," <i>Peptides</i> , 16:1097-1107, 1995.
	C43	Zweigenbaum <i>et al.</i> , "Bioanalytical high-throughput selected reaction monitoring-LC/MS determination of selected estrogen receptor modulators in human plasma: 2000 samples/day," <i>Anal. Chem.</i> , 74:2446-2454, 2000.
	C44	Zweigenbaum <i>et al.</i> , "High-throughput bioanalytical LC/MS/MS determination of benzodiazepines in human urine: 100 samples per 12 hours," <i>Anal. Chem.</i> , 71:2294-2300, 1999.

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